I (WE) CLAIM:

1. In an electrically conductive acoustic matching layer having top and bottom surfaces, each of the top and bottom surfaces substantially in an azimuth and elevation plane when used on a sonic transducer, an improvement comprising:

a conductor aligned relative to the top and bottom surfaces at least partly within the matching layer.

2. The improvement of Claim 1 wherein the conductor is aligned perpendicular to the top and bottom surfaces.

3. The improvement of Claim 1 wherein the matching layer corresponds to an element of the transducer, the conductor and at least one additional conductor aligned between the top and bottom surfaces within the element.

4. The improvement of Claim 1 wherein the matching layer corresponds to an element of the transducer, the conductor positioned closer to an edge of the element than a center of the element along the elevation and azimuth plane of the bottom surface.

5. The improvement of Claim 1 wherein the matching layer comprises castable material

6. The improvement of Claim 5 wherein the castable material comprises a polymer.

7. The improvement of Claim 1 wherein the conductor comprises a conductor material in a via extending from the top surface to the bottom surface.

8. The improvement of Claim 7 wherein the conductor material is a metal plating.

9. The improvement of Claim 1 wherein the conductor comprises conductive film extending from the top surface to the bottom surface at least partly within the layer.

10. The improvement of Claim 9 wherein the conductive film comprises sputtered metal.

11. The improvement of Claim 9 wherein the conductor comprises a plurality of enclosed shapes in cross section viewed perpendicular to the azimuth and elevation plane of the top surface.

12. The improvement of Claim 9 wherein the matching layer comprises a solid matching layer material, the conductor positioned between separate volumes of the solid matching layer material.

13. The improvement of Claim 1 wherein the conductor comprises magnetic particles aligned such that the longest dimension of the magnetic particles is more along a dimension perpendicular than parallel to the top and bottom surfaces.

14. The improvement of Claim 13 wherein the magnetic particles comprise a soft magnetic powder.

15. The improvement of Claim 1 further comprising a metal layer on each of the top and bottom surfaces.

16. A method for conducting electrical potential through a matching layer having top and bottom surfaces, each of the top and bottom surfaces substantially in an azimuth and elevation plane when used on a sonic transducer, the method comprising:

(a) aligning a conductive material relative to top and bottom surfaces of the matching layer, the conductive material at least in part within the matching layer; and

(b) electrically connecting the conductive material with the transducer.

17. The method of Claim 16 wherein (a) comprises aligning the conductor perpendicular to the top and bottom surfaces.

18. The method of Claim 16 further comprising:

(c) providing the conductive material in a plurality of paths between the top and bottom surfaces for each of a plurality of elements of the ultrasound transducer.

19. The method of Claim 16 further comprising:

(c) providing the conductive material in a path between the top and bottom surfaces at an edge of an element of the ultrasound transducer wherein a center of the element is free of electrically conductive paths.

20. The method of Claim 16 wherein (a) comprises aligning the conductive material in the matching layer of castable material.

21. The method of Claim 16 wherein (a) comprises:

(a1) forming at least one via in the matching layer, the via extending between the top and bottom surfaces; and

(a2) providing the conductive material in the via.

22. The method of Claim 21 wherein (a2) comprises one of: plating, filling and coating the via with a metal layer.

23. The method of Claim 16 wherein (a) comprises:

(a1) forming interior surfaces within the matching layer;

(a2) positioning the conductive material on the interior surfaces; and

(a3) filling a part of the matching layer associated with the interior surfaces.

24. The method of Claim 23 wherein (a1) comprises dicing the matching layer, the dicing providing kerfs with side walls comprising the interior surfaces, (a2) comprises one of sputter, depositing and plating a metal film on the interior surfaces and (a3) comprises filling the kerfs.

25. The method of Claim 23 wherein (a1) comprises molding a portion of the matching layer.

26. The method of Claim 23 wherein (a1) comprises forming a crossing pattern of interior surfaces in the azimuth and elevation dimensions.

27. The method of Claim 16 wherein (a) comprises:

(a1) providing magnetic particles within a castable material; and

(a2) providing a magnetic field extending more perpendicular than parallel to the top and bottom surfaces.

28. The method of Claim 16 further comprising:

(c) forming a metal layer on each of the top and bottom surfaces.

29. The method of Claim 16 wherein (a) comprises

(a1) combining alternate conductive and non-conductive material layers; and

(a2) sectioning perpendicular to layers of conductive material

30. The method of Claim 29 further comprising:

(c) applying the conductive layer to the non-conductive layer prior to combining.

31. The method of Claim 16 wherein (a) comprises aligning the conductive layer which is not planar.